WHAT IS CLAIMED IS:

1. A hard film formed by an arc-discharge ion-plating method, having a composition comprising metal components represented by Al_xCr_{1-x}, wherein x is an atomic ratio meeting $0.45 \leq x \leq 0.75$, and non-metal components represented by $N_{1-\alpha-\beta-\gamma}B_\alpha C_\beta O_\gamma$, wherein α, β and γ are respectively atomic ratios meeting $0 \leq \alpha \leq 0.15$, $0 \leq \beta \leq 0.35$, and $0.01 \leq \gamma \leq 0.25$; said hard film having the maximum X-ray diffraction intensity in a (200) face or a (111) face, and the binding energy of Al and/or Cr to oxygen in a range of 525-535 eV in an X-ray photoelectron spectroscopy.

2. A hard film formed by an arc-discharge ion-plating method, having a composition comprising metal components represented by $Al_xCr_{1-x-y}Si_y$, wherein x and y are respectively atomic ratios meeting $0.45 \leq x \leq 0.75$, and $0 < y \leq 0.35$, and non-metal components represented by $N_{1-\alpha-\beta-\gamma}B_\alpha C_\beta O_\gamma$, wherein α, β and γ are respectively atomic ratios meeting $0 \leq \alpha \leq 0.15$, $0 \leq \beta \leq 0.35$, and $\gamma \leq 0.25$; said hard film having the binding energy of Al, Cr and/or Si to oxygen in a range of 525-535 eV in an X-ray photoelectron spectroscopy.

3. The hard film according to claim 2, wherein Si exists in the form of a nitride, an oxide and a metal, and wherein when the relative intensities of the Si metal and its nitride and oxide determined by X-ray photoelectron spectroscopy are represented by I(Si), I(Si-N) and I(Si-O), respectively, with I(Si) + I(Si-N) + I(Si-O) = 100%, I(Si-N) is 52% or more.

4. The hard film according to claim 2, wherein it has a crystal structure having the maximum X-ray diffraction intensity in a (200) face or a (111) face.

5. A hard film formed by an arc-discharge ion-plating method, having a composition comprising metal components represented by $Al_xCr_{1-x-y}Si_y$, wherein x and y are respectively atomic ratios meeting $0.45 \leq x \leq 0.75$, $0 \leq$

$y \leq 0.35$, and $0.5 \leq x + y < 1$, and non-metal components represented by $N_{1-\alpha-\beta-\gamma}B_\alpha C_\beta O_\gamma$, wherein α, β and γ are respectively atomic ratios meeting $0 \leq \alpha \leq 0.15$, $0 \leq \beta \leq 0.35$, and $0.003 \leq \gamma \leq 0.25$; said hard film having an NaCl-type crystal structure in an X-ray diffraction, with a half width of 2θ at a diffraction peak corresponding to a (111) face or a (200) face being 0.5-2.0°; and said hard film containing oxygen more in grain boundaries than in crystal grains.

6. The hard film according to claim 5, wherein said hard film has the binding energy of Al, Cr and/or Si to oxygen in a range of 525-535 eV in an X-ray photoelectron spectroscopy.

7. The hard film according to claim 5, wherein said hard film has the maximum oxygen concentration in a region of depth within 500 nm from the outermost surface.

8. The hard film according to claim 5, wherein it meets $0.3 < I(200) / I(111) < 12$, wherein I(111) and I(200) are the X-ray diffraction intensities of a (111) face and a (200) face, respectively.

9. The hard film according to claim 1, wherein its elastic recovery ratio E determined by a nano-indentation method is 28-42%.

10. The hard film according to claim 2, wherein its elastic recovery ratio E determined by a nano-indentation method is 28-42%.

11. The hard film according to claim 5, wherein its elastic recovery ratio E determined by a nano-indentation method is 28-42%.

12. The hard film according to claim 1, wherein it has a surface smoothed by mechanical working.

13. The hard film according to claim 2, wherein it has a surface smoothed by mechanical working.

14. The hard film according to claim 5, wherein it has a surface smoothed by mechanical working.

15. The hard film according to claim 1, wherein a ratio of said non-metal components to said metal components is 1.1 or more.

16. The hard film according to claim 2, wherein a ratio of said non-metal components to said metal components is 1.1 or more.

17. The hard film according to claim 5, wherein a ratio of said non-metal components to said metal components is 1.1 or more.

18. A tool coated with at least one layer of a hard film formed by an arc-discharge ion-plating method, said hard film having a composition comprising metal components represented by Al_xCr_{1-x}, wherein x is an atomic ratio meeting $0.45 \leq x \leq 0.75$, and non-metal components represented by $N_{1-\alpha-\beta-\gamma}B_\alpha C_\beta O_\gamma$, wherein α, β and γ are respectively atomic ratios meeting $0 \leq \alpha \leq 0.15$, $0 \leq \beta \leq 0.35$, and $0.01 \leq \gamma \leq 0.25$; said hard film having the maximum X-ray diffraction intensity in a (200) face or a (111) face, and the binding energy of Al and/or Cr to oxygen in a range of 525-535 eV in an X-ray photoelectron spectroscopy.

19. A tool coated with at least one layer of a hard film formed by an arc-discharge ion-plating method, said hard film having a composition comprising metal components represented by $Al_xCr_{1-x-y}Si_y$, wherein x and y are respectively atomic ratios meeting $0.45 \leq x \leq 0.75$, and $0 < y \leq 0.35$, and non-metal components represented by $N_{1-\alpha-\beta-\gamma}B_\alpha C_\beta O_\gamma$, wherein α, β and γ are respectively atomic ratios meeting $0 \leq \alpha \leq 0.15$, $0 \leq \beta \leq 0.35$, and $\gamma \leq 0.25$; said hard film having the binding energy of Al, Cr and/or Si to oxygen in a range of 525-535 eV in an X-ray photoelectron spectroscopy.

20. A tool coated with at least one layer of a hard film formed by an arc-discharge ion-plating method, said hard having a composition comprising metal components represented by $Al_xCr_{1-x-y}Si_y$, wherein x and y are respectively atomic ratios meeting $0.45 \leq x \leq 0.75$, $0 \leq y \leq 0.35$, and $0.5 \leq x + y < 1$, and non-metal components represented by $N_{1-\alpha-\beta-\gamma}B_\alpha C_\beta O_\gamma$,

wherein α, β and γ are respectively atomic ratios meeting $0 \leq \alpha \leq 0.15$, $0 \leq \beta \leq 0.35$, and $0.003 \leq \gamma \leq 0.25$; said hard film having an NaCl-type crystal structure in an X-ray diffraction, with a half width of 2θ at a diffraction peak corresponding to a (111) face or a (200) face being 0.5-2.0°; and said hard film containing oxygen more in grain boundaries than in crystal grains.

21. The hard film-coated tool according to claim 18, wherein another hard film is formed directly on said hard film.

22. The hard film-coated tool according to claim 19, wherein another hard film is formed directly on said hard film.

23. The hard film-coated tool according to claim 20, wherein another hard film is formed directly on said hard film.